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Published every Wednesday, by

THOMAS G. NEWMAN,
EDITOR AND PROPRIETOR.

Statistics on Bees and Honey.

It seems we are not to have the complete statistics on bees and honey—at least, not this year. Various things have operated against universal reports by bee-keepers. Some have been so unwise as to state publicly that this statistical work was only intended to benefit the BEE JOURNAL, and hence should be frowned down. We were not present at the National Convention that appointed the committee, and did not even know of its existence until sometime afterwards. When the committee met to adopt plans for obtaining the information, two of the members of the committee, who were editors of bee periodicals, voted to leave the entire arrangement in the hands of Dr. Miller, the other member of the committee, for two reasons: first, because of his eminent skill in figures, and his peculiar fitness for the work, and secondly, he was not connected with any bee paper, and in order to avoid jealousy, and to make the matter a National and united undertaking, the two editors proposed second, and carried (being a majority) that Dr. Miller should act solely and alone, in the matter, promising, however, to do all in their power to make the matter a success.

Very soon, however, the cry was raised that a pledge had been exacted from the Doctor to preserve all the names and addresses sent in, and hand them over to the editors who were on the committee, to be used to their personal advantage, etc., as well as many other foolish things, such as jealousy alone could invent. Of course

Statistics on Bees and Honey.

STATES.	No. of Persons Reported.	No. of Colonies Fall, 1881.	No. of Colonies Spring, 1882.	No. of Colonies Fall, 1882.	Per cent. of Increase.	Honey in the Comb.	Extracted Honey.	Total Surplus Honey.	Average Per Colony.	Beeswax.
Arkansas	5	105	104	215	107	6,925	2,992	9,917	96	97
Canada	23	457	445	644	45	3,722	12,644	16,366	37	82
California	5	374	282	419	49	1,700	13,350	15,050	53	55
Colorado	2	2	12	35	192	290	175	465	39	3
Connecticut	3	23	24	49	104	425	841	1,266	53	9
Dakota	24	203	212	386	82	10,176	276	10,452	49	37
Florida	3	83	73	149	104	1,215	6,939	8,154	112	29
Georgia	1	19	18	42	133	50	50	50	3	4
Illinois	252	5,160	5,774	10,732	86	314,263	283,737	598,000	104	2,768
Indiana	116	2,058	1,911	3,437	80	33,673	45,484	79,157	41	704
Iowa	216	2,828	3,096	6,902	123	140,904	144,883	285,787	92	1,443
Kansas	24	299	352	476	35	7,593	11,011	18,604	53	122
Kentucky	34	642	714	1,195	67	6,345	4,765	11,110	16	87
Louisiana	2	98	90	132	47	50	4,200	4,250	47	....
Maine	134	1,840	1,325	1,971	49	18,000	3,440	21,440	16	10
Massachusetts	9	141	123	170	38	885	2,470	3,355	27	39
Maryland	24	67	63	595	844	1,034	1,418	2,452	39	35
Michigan	151	3,308	3,187	6,024	89	120,291	63,103	183,394	58	24
Minnesota	16	492	730	639	14	20,773	12,924	33,697	46	167
Mississippi	2	103	92	164	78	200	4,800	5,000	54	75
Missouri	34	611	595	1,087	82	18,548	29,654	48,202	81	178
Nebraska	15	137	134	583	335	6,385	8,460	14,845	111	39
N.H. Hampshire	2	.....	82	115	40	80	.....	80	1	50
New Jersey	11	246	237	332	40	2,696	4,818	7,514	32	49
New York	123	4,041	3,917	5,281	135	88,930	44,583	133,513	34	1,335
Nor. Carolina	2	44	44	94	114	250	1,450	1,700	39	27
Ohio	124	2,122	2,019	3,375	62	34,619	36,183	70,802	35	565
Oregon	3	67	63	89	41	155	1,865	2,020	32	6
Pennsylvania	73	1,370	1,660	2,362	42	54,740	19,033	73,773	44	488
Sou. Carolina	2	27	26	52	100	885	2,527	3,412	131	15
Tennessee	3	236	251	372	48	3,100	4,000	7,100	28	25
Texas	27	960	843	1,661	97	3,559	45,759	49,318	59	630
Utah	23	186	175	271	55	5,100	4,442	9,542	55	55
Vermont	18	361	375	554	48	5,840	2,655	8,495	23	129
Virginia	4	155	131	213	63	2,090	4,200	6,290	48	18
West Va. . . .	5	160	151	205	36	724	4,755	5,479	36	33
Wisconsin	56	2,648	2,936	4,556	55	70,538	134,255	204,793	70	1,078
Total,	1571	31,653	32,266	55,578	72	986,703	968,141	1,954,844	61	10,410

there was no truth in these assertions, for the committee did not even hint at any disposition to be made of the names, and we hope the Doctor has committed them to the flames, though we know nothing about their disposition.

We think the committee would have been quite willing to have given them to any or all of the papers not

represented; at least for one, the editor of the BEE JOURNAL, does not know or care what has become of them. He has not received them, does not want them, and would not accept of them, on any consideration.

The serious losses of bees in the spring, and the total failure of the honey crop in some sections, make it next to impossible to obtain a com-

plete Statistical Table, but such as it is, it is now represented by Dr. Miller, as follows:

Herewith may be found a table of statistical reports received in reply to the call made by the committee of the North American Bee-Keepers' Society.

Many of those who reported sent in only part of the items asked for, in some cases omitting the spring count, in others the fall count, especially that of 1881. This will explain such discrepancies as a positive gain in wintering, the apparent decrease for 1882 in Minnesota, and the enormous increase in Maryland. These defective reports might have been safely modified by assuming a fall count at least equal to the spring count, and assuming a spring count bearing at least a small proportion to the fall count, and the items of some of the States might have been largely increased by incorporating reports obtained from other sources, but it is, perhaps, best to give exactly what was sent in, in response to the call; neither adding to nor subtracting therefrom. It will be noticed that the largest numbers are reported for Illinois. It does not necessarily follow that Illinois has more honey than any other State. Possibly a good year in Illinois made more bee-keepers of that State willing to send in their reports. A bad honey crop in New York probably accounts for that State being sixth on the list as to number of persons reported. New York, however, stands second on the list as to spring count reported, showing that those reported from this State own a large number of colonies as compared with other States.

The average number of colonies reported for each apiary are:

Fall of 1881.....	20.1
Spring of 1882.....	20.5
Fall of 1882.....	35.4

The average number of pounds of honey produced by each person is:

Comb honey	628
Extracted.....	616
Total	1,244

The average number of pounds per colony:

Comb honey	30.58
Extracted	30.00
Total	60.58

Thanks are due to many, whom it would be a pleasure to name did space permit, for the pains taken in sending in reports for others. As has been suggested, Illinois makes the largest reports. On page 51 of BEE JOURNAL, is a table by counties for the State of Illinois of the honey crop of 1881, given at 618,947 pounds, and the total number of colonies (presumably spring count) for 1882, given at 86,633. These figures have been gathered by law by the assessors of the various townships, perhaps the only instance of official State reports of this kind ever published in the bee papers.

There are reasons for believing that these figures are below the mark, and yet the spring count for Illinois, in the present table, must be multiplied by 15 to make it equal the assessor's reports. After multiplying reports from other States by 2, 5, 10 or 20 to bring them on a level with Illinois, then multiplying again by 15 we may get at something like the truth.

C. C. MILLER,
Chairman Statistical Committee.

We have had this report in type for several weeks, and furnished Dr. Miller proof sheets of it, to save the labor of copying it entire, which he has sent to all the bee papers to be published simultaneously in the May numbers. This we did, of our own accord, to prevent any jealousy, and because we do not want any advantage over the monthlies, by our having a weekly paper, in which we might have given it, in advance of all others. We mention this simply to show that we do not desire to take the slightest advantage of them, and are doing all in our power to foster the monthlies—the "weaker vessels." We now hope that all will be satisfied—and as far as possible, that harmony will prevail, for among us, as co-workers in one common cause, "no contention should ever arise, save that noble contention, or rather emulation, of who can best work, and best agree."

Honey Ants of Texas.

Mr. W. H. Weston, of London, Ont., writes us as follows:

The following item was in our daily paper, and I would like you, Mr. Editor, to give us your opinion on the subject. I think it would interest some of your many readers, who, like myself, never heard of the kind before. The item is as follows:

"The *Freie Presse* of San Antonio, Texas, tells of a species of ants found in that State which make a honey equal to any that is produced by bees. The little insects store the honey, as they gather it, in a pouch about the size of a small pea that is attached to their bodies. When this pouch is full, they march into the cells of their subterranean habitation and there unload. The *Presse* says that these ant hills are as full of honey as bee hives, and suggests that they could be turned to the same practical food-producing use if similar care were taken in breeding and cultivating the insect."

The "honey ants of Texas" are thus described by Mr. Leo Smith, of that State, who has a specimen of them: "These ants are a medium size between the large and small red ants, and are of a reddish and brown color. Appended to the rear of each one is a

transparent sack or globe filled with pure, clear honey of a most delicious flavor. These sacks vary in size on different ants—ranging between the size of a buckshot and a navy-pistol-ball. On this sack, at short intervals are attached thin layers about the length and width of half a grain of rice, and of a dark color, evidently to strengthen it and keep it in shape. These interesting animals, when they crawl, draw their delicious load after them, and if the sack is empty, they set themselves to work to replenish it again."

The suggestion of the *Freie Presse* that they could "be turned to the same practical food-producing use" as honey bees, if similar care were taken in breeding and cultivating the insect," is not warranted by the facts in the case. They are said to deposit the honey in a reservoir among the rocks for future use, and have no idea of building combs in which to keep it clean and fit for human use.

Comb Foundation.—The *American Agriculturist* remarks as follows on the use of comb foundation:

No discovery, if we except the Langstroth hive and the Extractor, has done so much to advance apiculture as that of comb foundation. No one should think of doing without foundation in the brood-chamber. We advise the use of wired frames. Then the cells will not be enlarged by sagging, the foundation will not fall from the frames, it will not warp and bend, and the frames of comb will be secure and safe to ship. Good foundation must have very thin bases to the cells, and high walls, the wax of which shall not be much compressed. Such foundation is made by the roller machines. Foundation is also very valuable for sections, for which we would use 7 feet to the pound, and only worker size. If one has less than 100 colonies of bees, it will hardly pay him to purchase a mill unless he desires to manufacture foundation to sell.

An exchange remarks: The sting of a bee, it is said, when compared with the point of a fine needle under a powerful magnifying glass, is scarcely discernible. But the trouble is, that when a man gets a bee sting, he forgets to compare it with a needle; hence it always is discernible, and by a large majority.

The coming World's Industrial and Cotton Centennial Exposition will have a special department for the display of everything connected with bee-culture.

Cultivation of Alsike Clover.

R. W. KEENE, M. D., of Versailles, Ky., requests as follows:

Please inform me through the BEE JOURNAL, of the most profitable way to manage alsike clover, both for seed and honey. If I cut the first crop just as it begins to bloom, for hay, so that it will bloom again after white clover, will the second crop bear seed as well as the first crop? If I let the first crop stand until ripe enough for seed, will there be a second-crop bloom, worth anything for the bees? I have sown melilot for three years, and it will not stick here, on poor soil. I have sowed $\frac{1}{2}$ bushel, this spring, on good soil, if that will not stick, I am done with melilot. Alsike does finely.

To answer this, as well as to anticipate further queries on the subject, we will reproduce the instruc-



Alsike Clover in Bloom.

tions given in the BEE JOURNAL for Jan. 5, 1881, as follows:

It ripens, in the latitude of Chicago, in the latter part of July, but needs not to be cut till August, if the weather should be unfavorable. The crop of seed is always obtained from this cutting, in which respect it is unlike the common red. It is not advisable to cut this clover more than once each season, but it may be pastured moderately during the fall. When cut for seed, it may be threshed from the field with a common clover machine; but, if more convenient, it may be stacked and threshed during the fall or winter.

Care should be taken in handling this clover, as the seed shells very easily; but this is looked upon as a point in its favor, as the land thus becomes re-seeded every year, and so early, that if the autumn proves to be a wet one, nearly every grain will germinate, and a fine growth of new plants will be secured for the follow-

ing year. The seed is very fine—being about the size and shape of white clover—a pound containing, it is said, about 600,000 grains, or three times as many as the common red. The seed-pods contain 1, 2, 3 and sometimes 4 grains, which explains why it is so prolific—a moderate yield being from 150 to 200 pounds of seed to the acre.

Work in the Apiary for May.

The American Agriculturist gives the following in the May number just received:

May is a busy month in the apiary. If in good condition, the brood ought now to be abundant, and the growing hives will show that rapid preparation is under way for the coming harvest of white clover and raspberry honey. If any colony is weak, it should either be united with another colony, or built up by adding combs of sealed brood from hives strong enough to spare it. Unsealed brood is likely to chill, if given to a weak colony, and be lost. As the colony grows stronger, more brood may be given it. Poor queens should be superseded as soon as possible by those that are redundant in eggs. When hives are united, the most prolific queen should always be retained. Queens of the best quality are so easily and cheaply secured, that it never pays to tolerate a poor one.

Colonies may be easily, quickly, and safely united. Move the two hives a little day by day—three or four feet—until they are side by side. If moved too far at first, the bees will go back to their old stand, and, not finding the old home, will be lost, or attempt to enter some strange hive and be killed. When the hives are close, side by side, smoke the bees thoroughly in both hives, that they may fill themselves with honey. Bees, like men, are better natured when the stomach is well filled, and usually meet a kind reception from their mates when they come laden with honey. Destroy the poorest queen, and separate the combs containing brood in the hive where she has previously reigned, and fill in with the brood combs containing brood, bees, queen, and all, from the other hive. Thus the frames from the two hives will alternate in their new position. Confine the combs with the division-board, cover all warmly, and add frames of comb or "foundation" as needed by the growing colony.

We have received a descriptive circular of a newly patented bee hive, by G. K. Hubbard, La Grange, Ind., printed at the office of *Gleanings in Bee Culture*. It is a very handsome little pamphlet. The frames are operated like the leaves of a book, and the surplus arrangement is for sections.

A wag, on reading the report that honey was a drug on the market, said that it was one of the few drugs he cared to take.

Sundry Questions.

1. Why does not Mr. Doolittle adopt and practice the method he describes on page 115, on a larger scale? What becomes of the 70,000 workers in winter?

2. Does Mr. Heddon deduct the weight of wood, glass, tin points, etc., when marketing his comb honey? If not, why cannot we report the same as honey in our reports, if we sell it as honey. See page 142. A. W. R.

[Messrs. Doolittle and Heddon will doubtless reply to these queries.—ED.]

Many of the agricultural papers now contain the advertisement of Mrs. Lizzie Cotton. She is "pushing" for the dollars of the unwary. Several copies of such papers have been sent us by bee men in different localities, with her advertisement marked. Of course no one who reads the bee papers will be duped.

Why is a bee sting on the upper lip like an unanswerable argument? Because it makes people hold their jaw.

An exchange correctly remarks: "Bee-keeping is a science, and requires a great deal of study with a reasonable amount of enthusiasm, hard work and strict attention."

We carefully mail the BEE JOURNAL to every subscriber, but should any be lost in the mails we will cheerfully send another, if notified before all the edition is exhausted.

Convention Notices.

The Mahoning Valley bee-keepers will hold their 13th meeting in the Town Hall, at Berlin Centre, Ohio, on May 5. All bee-keepers, and the public in general, are invited to attend. Do not forget to bring your wives, children, and a well-filled lunch basket. We expect a grand meeting.

L. CARSON, Pres.
H. A. SIMON, Sec. pro tem.

The spring meeting of the Cortland Union Bee-Keepers' Association will be held in Cortland, N. Y., on Tuesday, May 8, 1883.

M. C. BEAN, Sec.

The Iowa Central Bee-Keepers' Association will hold their semi-annual meeting at Winterset, Iowa, on Friday, May 11, 1883. All interested in anything pertaining to bee-culture are invited to attend, and bring anything that will be of interest to the bee fraternity.

J. E. PRYOR, Sec.
A. J. ADKISON, Pres.



For the American Bee Journal.

The Standard Frame.

JAMES HEDDON.

Recently I have discovered that upon this subject there is more than a common interest for the weal or woe of the general fraternity; there is a prejudice, an interested spleen against one frame and in favor of another. This should not be. Speaking from my own standpoint, one forced upon my convictions from the object lessons, readings and cogitations of my few years' devotion to apiculture, I must say that it is my opinion that there has not been a patent connected with a bee hive issued since the Langstroth Patent, that has proved to be worth the paper it was written upon. There has been some modifications that are real improvements, but these have not been patented. The old specifications to the Langstroth Patent should be read and re-read by every bee-keeper. I am astonished that so many professedly advanced bee-keepers should still be found behind the thoughts of Mr. Langstroth of 25 years ago. Many there are who are not to this day aware of who gave us the "laterally-movable frame," and shallow air chamber above it, and of these enormous advantages above all other styles of adjusting frames. Then we are told that all this was "old," that Simon Von Denderblitz had the same thing in use in Germany years and years ago. That Jerry Sharpers' "Uncle Levi" used these air chambers and laterally-movable frames "years and years" ago, down in old Connecticut. Well, suppose for the sake of the argument, that these were all in use before Mr. Langstroth ever saw the light. These pseudo discoverers did not discover the value and worth of their discoveries, hence did not bless you and I, reader, and by the patent laws of the U. S., because of this lack on the part of these geniuses, he who comes after with the "right," because he is the real benefactor.

Well, what has this to do with the most appropriate frame for a standard? Just this. The man who possessed the genius to bless the world with such mechanical inventions as these embraced in the Langstroth hive, is as apt to know what frame and devices are best, as any other person.

Mr. Langstroth experimented much in regard to the best length and depth of frame, and his standard is now accepted and adopted by more bee-keepers than all the other sizes and frames put together. Now, I am requested, by several, to state what that standard is, in exact dimensions. One private correspondent says: "There are nearly as many standards as bee-keepers." Another says: "I think

there should be printed in the bee periodicals, a standard row of figures indicating the exact size of the standard Langstroth frame." That would raise a "standing" controversy, because many of our hive makers, and I guess a majority of them are putting on a frame as standard which is $\frac{1}{4}$ inch too long. Many have copied after them, and they have this mongrel, too. All who took the dimensions of all of the parts of the Langstroth hive and frame from Mr. Langstroth's book, it seems to me, can consistently claim to have the standard frame.

Now, this frame has outside dimensions as follows: $9\frac{1}{8}$ deep by $17\frac{3}{8}$ long, and not $17\frac{1}{2}$ as many are using. Of course there is practically no difference in the usefulness of these different lengths, varying only $\frac{1}{4}$ inch, but it is really too bad that such differences should occur on account of the imperfection of the fit when frames are changed from one to the other. As I am one among thousands who took my measurements from the book, and all parts fit each other perfectly, I shall insist with the rest, who use this size, that we have the standard Langstroth frame, and it is the business of those who have departed from this standard, whether by intention, accident or imitation to come back to the true size. To illustrate with what rapidity bee-keepers are changing to this frame, I have to tell you that the sales of other size brood foundation decreases ten-fold each year. To illustrate how popular wired frames are becoming, the trade in fine wire increases ten-fold yearly.

There is no use to stand out, the Langstroth frame is to be the universal standard, and the more general it grows, the greater becomes the necessity for those who use other frames to change to this size. I changed when I had 50 hives, and again, when I had more, did I change the number of frames per hive, and it paid me. I hope and expect the day will come when we shall be using a hive almost universal.

Now, we have different modifications of the Langstroth hive; but this works pretty well if we have the same size frame in them. Mr. Jones uses 10 frames, Mr. Smith 9, and Mr. Brown 8. One has a portico, another none, etc., etc. My own preferences have caused me to use no more than 8 frames; to dispense with the portico, to reduce the top bar of the frame from $1\frac{1}{2}$ to $\frac{1}{2}$ inch wide; to exchange the nearly solid flat top honey board to a skeleton with many perforations and a sink in the top; to swap off the old boards and cap for sections in a case, on the tiering-up plan; to dispense with the division-boards; to make the sides only $\frac{1}{4}$ inch and the bottom and cover only $\frac{1}{8}$ in thickness. But I still adhere to the tight-bottom, triangular entrance blocks, wood rabbits, the latterly-movable frames, whose top-bars are "separated from each other throughout a portion or their entire length." It is simply a Langstroth hive, modified to adopt it to modern improvements and to my own taste.

Were we all forced to use hives embracing no principles, infringing the once patented claims of Mr. Langstroth, we would give up the business in disgust, I fear.

Dowagiac, Mich., April 18, 1883.

For the American Bee Journal.

The Bee Journal as a Text Book.

WM. S. BARCLAY.

As others have given their views as to the best manner of keeping and using the JOURNAL subject matter, which I am always glad to read. I have thought proper to state the manner in which I utilize it, to make it a more important auxiliary to our pursuits as a reference, than even any of our standard aparian works.

I have been a constant reader of the JOURNAL since its first publication in Philadelphia, by Mr. Samuel Wagner, in 1861. I have followed it through its varied vicissitudes up to its present able management and perfection, and at no time did I feel that its valuable counsels could be dispensed with. I remember well with what regret I read of its suspension at the close of the first volume, and during the five years of our late war, and with what gladness I hailed its re-appearance upon the dawn of peace upon our deeply-scoured nation, it was looked upon with such feelings as the storm-tossed mariner beholds, after a dark tempestuous night, the re-appearance of the bright polar star by which he may guide his vessel safely to port. There are few among its readers who will not join me in the hope that a similar calamity may never again overtake us.

After this digression, for which I crave pardon, I will briefly state how I use the JOURNAL. When I receive it I read every article carefully. When I meet a subject that is useful in the practical workings of the apiary, I mark it with my pencil, this is to direct attention for another perusal, if I find in the subject anything of practical importance, I note it at the top or bottom of the page with the name of the author, not always, however, with the same caption or title given by the writer, but under such headings as will direct immediately to the matter it contains, the season, the location, or whatever else will render it useful as a reference; oftentimes making two or more references to the same publication; the object of these notations being to arrange them in an alphabetical index of all the volumes of the JOURNAL. At the close of the volume, or more frequently if thought proper, I transfer these headings to the general index. This book now covering all the eighteen volumes of the JOURNAL has attained quite considerable dimensions, and there is no subject to which I wish to refer, whether it be under the title given it by the author, or whether it may contain an important fact not embraced in its title, which I cannot turn to immediately by an examination of this general index. It is true that under the system recently adopted in index-

ing the JOURNAL, the necessity of the system I have adopted is not so apparent, and yet after observing its practical utility for the past fifteen years, I am unwilling to give it up. No one who has not practiced it, can know the convenience of having each distinctive article classified under its proper heading, and then again to have before the eye, not only the number of the volume, but the page itself upon which to find the matter upon which you are in pursuit.

I most heartily congratulate Mr. Newman upon his present copious system of indexing, and feel that in this direction nothing more could be desired, if it could be in any other department of the management of our JOURNAL, and as to this point, I feel like saying that "I could not change it, if I would," (and in so far as to its neatness in arrangement, and its practical usefulness to the apiarist) "I would not, if I could."

Although somewhat out of place I cannot close this article without first thanking Mr. Stith, of Ky., for his very able and most practical treatment of the subject of "Comb vs. Extracted Honey," on page 186 of the current volume of the JOURNAL; especially noteworthy is the last clause of the article. Correspondents will do well to make a note.

Beaver, Pa., April 23, 1883.

For the American Bee Journal.

Moving Bees—Substitute for Pollen.

G. W. DEMAREE.

I have been remodeling my apiary of late, and have added something to my limited stock of experience. The grounds occupied by my apiary becoming crowded and unsatisfactory, I selected a new site, and proceeded to erect suitable buildings on it. My bees were moved to their new location on the first few days in March. The distance of the move was about 240 feet, and the hives were closed at the entrances, and borne gently between two men. The days being cool, many of the colonies did not seem to arouse sufficiently to realize that they were being moved from their old home.

I now proceeded to carry out a long cherished plan of mine, viz: get under my control, if possible, all the native and mixed bees within dangerous proximity to my "breeding field." I called on every person who owned a single colony within a reasonable distance of my location, and by accepting their terms, if I could not get my own, I succeeded in getting possession of every one of them but two, and they will be Italianized. There were 25 in all, and I now have them sitting as a sort of "suburb" to "Sweet City." A few of them are in Langstroth and American hives, and the rest of them—well, it would be a difficult matter to describe the utter squalidity of their villainous-looking habitations. For the present I have dubbed this part of the apiary with the title of "Old Africa." Their fighting qualities are good, and would

"convert" a field full of advocates of black and degenerate hybrid bees. They will undergo a great change, however, as soon as the season will admit of it. Having moved my 50 colonies so short a distance, and gathered up all the bees near me, of course I felt some anxiety as to the results when the first warm day should come. The 9th of March brought with it nice warm weather, and the bees were on the wing all day. Every precaution was taken to induce the bees to "mark" their new location, and with good effect, for, although, a great many returned to their old location, and gathered in knots on the fence and about the trees near where the hives had formerly been, they were all able to return to the newly marked location, and there was no perceptible loss of bees. The bees which were gathered from the country, even those colonies that were moved not more than a quarter or half mile, adhered to the new location without exception, so far as I could see or learn.

A modern apiary, with its buildings properly equipped with all the appliances necessary to a first-class apiary, and with a well-ordered queen-rearing department attached to it, is a wonderful curiosity to our blue grass farmers and business men, and with the many amusing questions with which I am pried, I sometimes wonder if these people, although they have known me well and long, do not entertain some suspicions that I am getting "cranky" on the bee question. I, in turn, reap some amusement from their benighted curiosity.

Mr. James Bohannon, an old bee man, who is my assistant in the apiary this summer, and myself, have no little merriment over the ludicrous questions which we manage to answer pleasantly every day.

I have noticed, this spring, that our bees have sought, with more than usual diligence, for a substitute for pollen, and I have found, to me at least, a new and very superior substitute for that essential article to brood-rearing. Our stock breeders feed to their cattle, especially to milch cows at calving time, "oil cake meal." While feeding some of this glutinous meal to my milch cow, I noticed that the bees had passed the several boxes of unbolted wheat and rye flour, and were swarming in the trough where this oil cake meal had been fed. I at once took the hint, and mixed some of this meal with the unbolted flour, in one of the several boxes which were being visited by the bees, and in a short time this box swarmed with a scrambling mass of workers, who loaded up and bore away their loads with the greatest eagerness. After trying it, I believe it to be the greatest stimulant, next to natural pollen, to early breeding, yet discovered. And I further believe, from the medicinal qualities of the "oil cake meal," it can be given to bees which have suffered from long confinement and dysenteric troubles, with the best of results. Of course I mean after they begin to fly in the spring of the year. I have long been of the opinion that

the trouble called "spring dwindling" is caused by long confinement and consequent exhaustion of vital powers. Of course, to restore such bees to health would lengthen their days.

Christiansburg, Ky.

For the American Bee Journal.

Rearing Queens—Shipping Cages.

W. Z. HUTCHINSON.

It is possible that there are better cages for introducing queens than the old fashioned wood cages, but there are certainly no better shipping cages. I am rather inclined to favor the plan of introducing queens given by Dr. J. P. H. Brown in his circulars, which is that of placing the queen in a new cage similar to the cover of the Harris mailing cage, and confining her against the side of a comb. The Doctor says that a cage in which bees have been mailed, often emits a disagreeable odor that acts against the successful introduction of the queen. I prefer a simple wooden cage with one apartment for the queen and bees, and another for the Good candy, with a passageway connecting the two apartments. The Good candy has been so thoroughly described of late, that a description here would be superfluous.

Early and late in the season, when the weather is cool, a large number of bees, perhaps 30 or 40 should be caged with the queen; but during the hot days of July and August, 8 or 10 bees are sufficient. Most breeders have thought it best to ship queens as soon as possible after caging them, but it is possible that they stand the rough handling, that they receive in the mails, much better if they are caged 24 hours before shipment; as they then have time to become reduced in size, are less clumsy, and can more easily "brace up" and prepare for the bumps and thumps.

About the first of September I begin uniting the weakest nuclei by simply carrying the combs, with the adhering bees, from one nucleus and putting them in with another. Some of the bees go back to their old location, but, as they find the entrance closed, they soon unite with the nucleus in the other end of the hive, and when the last nucleus is taken from a hive, the hive is carried into the shop, and the returning bees go into the nearest hives that have bees. After two nuclei have been united several days, I remove two of the combs, shaking the bees back into the hive, extracting the honey and storing the combs away for another season. I continue to unite the weakest nuclei, getting them stronger and stronger, and when the weather becomes too cool for queen-rearing, usually about Oct. 1, these strong nuclei are united into strong colonies and given queens.

I neglected to mention, in the proper place, that these queen-rearing nuclei will store just as much honey, in proportion to their strength and numbers, as will a full colony, and

I always give them plenty of empty combs in which to store the honey, extracting the honey when necessary. The strongest of them are often given foundation to draw out and fill with brood or honey.

Did every year bring forth a good honey season, the raising of honey would probably be more profitable than the rearing of queens, at present prices; but the fact that just about as many queens can be reared in a poor as in a good honey season, gives the queen breeder a little advantage over the honey producer. It is possible, however, that taking one year with another, the production of honey is the most profitable.

Rogersville, Mich.

For the American Bee Journal.

A Cure for Foul Brood.

R. J. KENDALL.

Reading "a manual of bee-keeping" by John Hunter, (published by David Bogue, 3 St. Martin's Place, Trafalgar Square, London, 1879), I came across the following on foul brood, which I have taken the liberty of sending to you for the JOURNAL, if you think it worthy of reprint. I know nothing of its efficacy, being only an amateur bee-keeper as yet, but send it you in case it happens to be new, so that bee-keepers who are curious about it, can try it if they choose. Mr. Hunter says:

"The cause of foul brood has been much debated, many observers being of opinion that the disease is simply the rotting of brood which had become chilled; but the opinion seems to be gaining ground that, like typhus and scarlet fevers in our human hive, it is solely produced from germs of a fungus, millions of which are floating in the atmosphere, and which, when finding an appropriate habitat, germinate and produce the disease; probably the foulness of dead larvae produces this condition, and the fungi spores there find the essential condition, as in like manner typhus finds it in squalor and dirt."

The author gives instances of the devastation the disease has caused in apiaries, and then adds: "A much vaunted cure for foul brood is salicylic acid; several eminent bee masters have spoken very highly of it as having been, by them, successfully used. I give the recipe, but in my own case it was utterly useless; although I used it lavishly in the most thorough manner, I was unable to find the least good result. Herr Hilbert reports that he cured 25 badly infected colonies by the following process: Dissolve 50 grammes (not quite 1½ ounces) of salicylic acid in 14 ounces of spirits of wine, which will be found sufficient for 12 colonies; 100 drops of this solution should be added to one pint of soft water lukewarm, with which the combs and hive should be well sprinkled, having first thoroughly shaken the mixture. The combs are to be replaced in their hives as soon as the operation is completed, and if no unnecessary delay is made, the brood will not be injured. A little of

the salicylic acid solution is also given to the bees in all food supplied. I do not, in the least, doubt Herr Hilbert's veracity, but think it possible the quarantine, after the treatment, had not been long enough to determine whether the reputed cure was fallacious or not. In my own case, I, several times, congratulated myself upon a cure, only, as after events proved, to be disappointed. Where an apiary is found infected, I am confident the wisest course is to destroy combs, frames, hives, and honey, as well as all tools and litter about the place that has been in contact with the colonies. The destruction, as advised, should be by burning, for if any piece of the comb, etc., is left about, and be visited by a bee, she carries home, perhaps, the germ of further trouble. The bees may be saved thus: Let them be driven, or by other means taken out of the hive and confined in a straw skep with plenty of ventilation for two days; the act of driving will have induced every bee to fill herself with honey from her old home; this, if allowed to be deposited in a new hive, would probably communicate the disease to the new combs, but by keeping the bees confined for the time mentioned, all the honey will be consumed, and the risk of infection considerably lessened. After the quarantine has expired, transfer the bees again to a clean hive; if they carried infection away from home, they will probably leave it in the temporary hive, which, to be on the safe side, should also be destroyed."

That seems to me a pretty destructive way of dealing with an apiary, and almost equivalent to destroying it altogether. Still, the acid cure may be worth something, and, in any case, I presume, you will not print unless you deem it worthy.

Austin, Texas.

[Much has been published in the BEE JOURNAL on this subject, and the remedy given above has been published over and over again. It is now given only for the benefit of new readers, like Mr. Kendall.—ED.]

For the American Bee Journal.

Small Packages of Honey.

S. P. BISSELL.

I would like to say to the many readers of the JOURNAL, that after having read the discussions in its columns upon the $\frac{1}{2}$ and 1 pound sections, I am heartily in favor of what is said by F. I. Sage, on page 146, of No. 11, March 14, 1883.

It has been my view from the first, that consumers will buy a two-pound package if they do not see a smaller one, and they will not see the smaller one unless some bee-keepers furnish it. It takes just as long to sell a half-pound package as it does to sell a two-pound package, and if the consumer be a regular customer, he will buy only a half-pound at a time if he can get it, and go without between times long enough to consume another half-

pound, before he will buy it; while, if he could get nothing less than two-pounds, he would consume much more honey in a given time, in two-pound packages.

Then, again, many buy honey but once in a life time. If that be a two-pound package instead of a half-pound, there would be four times as much sold; and that principle carried out, would dispose of each crop of honey in one-fourth of the time, and at one-fourth of the expense of the half-pound trade.

I heartily wish every bee-keeper in the world, could read the article above referred to, written by F. I. Sage. If the honey business is ruined it will be by the producers themselves, and not by the dealers. Mr. Sage is a large dealer, and not a producer, and says he can sell much more honey in large, than in small packages.

The coming season will make an impression upon the future of the bee business that will be felt for weal or woe, for a generation; therefore, permit me to admonish bee-keepers to consider well the effect upon the general business, before using anything smaller than two-pound sections.

Marble Rock, Iowa, April 23, 1883.

For the American Bee Journal.

Bee-Keeping in Utah.

JOHN DUNN.

I have taken great pleasure in reading and studying the articles published in the BEE JOURNAL, and my opinion has been, ever since I became acquainted with bee-culture, that no bee-keeper should be without a magazine of some kind, in relation to that part of his business. No one need think that they know it all; if they do, they should be willing to impart some of their knowledge for the benefit of the unlearned; not to tear down that which has been demonstrated as facts, but let the knowledge come, seasoned with the milk of human kindness. Our loss in bees has been light; a little over 7 per cent; although it has been the coldest winter that has been known in this valley. Most of the bees have been wintered on the summer stands. I wintered on the Heddon plan, as published last winter in the JOURNAL, and I have been successful. My bees came out all strong this spring. I find where the loss generally, with us, in wintering on the summer stands, is, in stopping the under current. All that I have examined has led me to stop the under draughts; also, not to leave the top boxes on, with the frames, but to place a piece of canton flannel over the under frames, or a chaff pad; and take out the frames of the top box and use it for packing, if desired. I have wintered 5 out of 7 without any top box on them. Since the first of the present month the weather has not been so that the bees have been out much; but, with feeding I have managed to have plenty of young bees, in all of my hives, and as soon as the weather is settled, I expect they will be out. Apricot trees

are white; some days with bloom, other days with snow. I have bought 3 more colonies; 2 of them hybrids that I intend to Italianize as soon as I can rear queens; the two are also in Kidder hives, which are mostly used here. I use the Langstroth, and will transfer the 2 into the Langstroth as soon as the apple trees are in bloom. For the past three years our assessor has assessed our bees, and at the last meeting of our bee men, in this city, the question was put, Has the assessor any authority for doing so? For my own part, I fail to see where he has any authority for doing so. It is not in our statute books, and he might as well assess our chickens, pigeons, rabbits, etc., as the bees. Speaking with the Judge, the other day, (by the way he is a bee man), he told me he thought that such an industry should be encouraged and not taxed. We intend to present the matter to the County Court, at the June term, and see what they have to say about the matter; only two of them, I understand, are bee men. I obtained 6 more colonies of Italian bees from Missouri, yesterday; they all came in good condition; the expressage was about \$7 per hive; last spring I got 2 for \$5 per hive.

Tooele City, Utah, April 12, 1883.

For the American Bee Journal

Bees in Hollow Trees, etc.

S. J. YOUNGMAN.

Old bee-keepers often refer to hollow trees as being the natural abode of bees, and often insinuate that cavities and surroundings of bees, in trees, should be followed in modern hives. This may be where they get the idea of a tall hive, with deep frames. I have hunted wild bees, and can say that they often make a very poor choice in a place for a home, and if the trees are left until cold weather has commenced, the bees are often found dead. In the fall of 1880, I found several bees trees. I selected two that were of medium size, and let them down carefully, with ropes, and took them home without breaking the combs. The "gums" were left, several feet in length, being cut off close to the bees on top, leaving a small but long cavity below the bees; but, notwithstanding, we had a mild winter. The bees died out, long before spring. I forgot to mention that the bees were removed in September, and gathered honey after that date.

The same fall I purchased 2 colonies in the Harbison hives. As we had a few inches of snow about Jan. 1, I moved them on a sleigh, a distance of four miles, over a very rough road. After reaching my place, they were put into a closet in an old deserted house, where they were left about two months, when they were taken out and set on the summer stands, strong in numbers, and they swarmed early in the spring, showing that it is not always fatal to bees to move them in winter. We have had a long and severe winter here, and nearly all the bees on the summer stands are already

dead. Some, also, of those that have been poorly packed with straw, are dead. One man built a small double-walled house; the walls were packed with straw, and his bees were put into it, with only the cloth covering over the frames, and an empty cap on. They soon died, leaving the hives full of ice and dead bees. There not being any dry material to absorb the moisture thrown off by the bees, it ran down on them and formed ice; the bees could not stand this cold deluge, and had to succumb to fate.

Cato, Mich.

For the American Bee Journal

Fastening Foundation in Sections.

E. H. THURSTON, M. D.

This is a matter that has given me, as well as others, no little trouble, and upon which I have given considerable thought and tried many experiments. For some time I have been practicing a plan something similar to that described by D. C. Talbot, of Wisconsin, on page 159 of the JOURNAL. I used wax and rosin, by means of a small can provided with a small spout. This works very well and fastens the foundation very securely, but it requires considerable experience and a great deal of practice to become proficient in its use. One of the worst features in the use of wax, or a compound of wax and rosin, is to keep the material at the proper temperature. To accomplish this I use a coal-oil stove. This, by a little experience, works well, but the worst difficulty I have had to contend with was the wax becoming hard in the spout; to free it of which would require considerable time, and perhaps by the time I would get the spout clear, my wax would be too hot, then I must wait until it cooled. I fear this would be the case with Mr. Talbot's apparatus. To contrive some plan to accomplish the fastening of foundation in boxes fast, and secure, with as little labor as possible, as I have said, is a matter that I have given much thought, and I now think I have accomplished the end.

I do not know whether my discovery is new or not, but of one thing I am sure it is much quicker done, and makes a neater job than any one can do by work or any machine for the purpose, and if manufacturers of section boxes will make the improvement in the boxes as they manufacture them, much time and labor will be saved.

The plan is this: After the sections are bent ready to fasten together (I mean one-piece sections) have a strip of hard wood one-half the thickness of the width of the section, or a piece of metal will do better perhaps, and about $\frac{1}{4}$ inch thick by 4 inches long for a one-pound section, and 5 for a two-pound section; now lay your box with upper end flat on a board with a straight edge upon the inner side, making a longitudinal cut with a sharp knife through the end of section, beginning $\frac{1}{2}$ or $\frac{1}{4}$ inch from the inner end of the top, extending it to the outer end, thus splitting the top

end of the box entirely through; having your foundation cut the desired size, which should be, if a whole sheet be used, $\frac{1}{4}$ to $\frac{1}{8}$ smaller than the inside of the box. Now by spreading the slit made in the end, the foundation is placed in the opening and the ends of the box brought together and fastened if desired. This will not require one-half the time that it does to melt wax and daub and smear the box, foundation, your fingers, and almost everything about you; besides, while I am waiting for wax to melt, or cool when too hot, I can slit and fasten the foundation in a dozen sections. If manufacturers of section boxes will split the ends of the boxes as they make them, by means of a fine saw, which should be thinner than thin foundation, thus saving the bee-keeper that labor, the work of fastening foundation will be rendered much easier and valuable time will be saved. I feel confident that all who will try this plan will be pleased with it.

My bees have wintered well on the summer stands, packed in sawdust. There has been great loss in bees in this country by dysentery; almost all who wintered bees out of doors, without some kind of protection, have lost very heavily, and some have lost all they had. The winter has been a very hard one on bees; this month I think has been as bad, if not the worst month of all. The weather has been so changeable; on the 18th the mercury was at 70, on 19th, 24°, and on the morning of the 20th at 6 above zero; at noon of the same day it ran up to 50°, and on the 21st it was down to 20°, and continued below freezing until the 24th.

Hagerstown, Ind., March 30, 1883.

For the American Bee Journal

Transferring—The Method I Prefer.

H. A. SIMON.

As the season for transferring will soon be at hand I will give my method. It may be of benefit to some, especially beginners. Last season I transferred 65 colonies from all sorts of hives and boxes to the Langstroth hive (which I consider the best hive for this section). I transfer from the first of May until swarming time, but the best time is during fruit bloom. My method is to puff a little smoke in the entrance of the old hive; invert and carry it to some out-house or shade tree, placing a box where the hive stood to catch returning bees; then with a nail cutter, about two feet long, and a saw, I remove two sides of the box. I do not drum the bees out, unless the colony is very strong, but commence cutting out the combs, placing them in pans, etc. As I cut out the combs, I smoke the bees a little, occasionally. They will crawl to the opposite side of the hive and will often cluster on the outside of the hive out of the way. There I let them remain for a time, while cutting out combs. If any young bees remain on them, I brush them into the new hive which I have close by. They will not fly out, but will remain there. After

this is done I commence to fit the combs into the frames, taking nothing but nice straight worker comb. How are we going to fasten these nice white heavy combs, filled with honey in hot weather? I have tried tin clasps, wire, cord, and, in fact, almost everything I "ever heard of," but nothing gave satisfaction. On my first examination after transferring, I found some of the heavy combs fallen down, packing bees and honey in one corner of hive; of course the tin clasps would be hanging about where I put them. Such transferring was no fun; it took too much time to straighten up the combs. A last I concluded to do better or nothing.

I think I now have that part a little nearer perfection. Instead of using tin, wire, etc., I use little sticks about $\frac{1}{8}$ inch square, reaching from the upper edge of the top bar to the bottom of the hive; place from 3 to 6 sticks between every frame of comb (or as many as may be necessary,) letting them rest on the bottom of the hive, and if there is not nice combs enough to fill the hive, I fill them with comb foundation. By this method it is impossible for combs to fall down. After the hive is filled, I shake the remaining bees on top or in front, and let them crawl in, and then carry it to its old stand. I always remove the sticks as soon as the combs are built fast. Speed in transferring is necessary in all cases. I stop robbing by covering the hive with a large sheet of muslin.

Lordstown, Ohio.

For the American Bee Journal.

Bee-Keeping in Iowa.

J. W. SANDERS.

The BEE JOURNAL is again received and read with interest. I have several items to report, but will not attempt all at this time. First, I saw in an editorial in the JOURNAL, sometime ago, where you said, if bees should show signs of dysentery, to give them a fresh frame of pure honey by laying it on top of the frames, and as I had one colony that were badly affected with dysentery, so much so that they had specked up all the front part of the hive, I tried the experiment. I got a frame of nice honey, and as clear of bee-bread as I could find, in the lot of extra frames I took from the colonies when preparing for winter. I warmed it up good, by keeping it in a warm room near the stove, for a while. Then took it and raised the quilt and laid it as directed, covering all up again (my bees are all in the cellar), and, to my great joy, I have seen no fresh sign for two or three weeks, and the colony seems all right now, as well as all the rest. While they seem so, and in fine condition, I shall let them remain in the cellar.

Several around here have set their bees out, and let them remain out. Do you think such management best? About the first of the month I fixed up two colonies for one of my neighbor's, that he had hauled ten miles on

a sled. As good luck would have it, we had a day that they could fly, in two or three days after he brought them here. It was a good thing for them, and they made good use of it. From all appearances, if they had not had the flight, they would have died in a few days. One hive had some comb broken, and was very wet inside, so I changed them into a dry hive, and, while doing it, found brood in all stages, from the egg up to sealed brood. Is that a good sign this early in the season? They had been wintered on the summer stands, well covered with snow.

I know a party who has a quantity of comb honey, in stone jars, taken out in the old way, with dark comb, light comb, bee-bread, and honey, all in one mass. It is now candied solid. He paid 18 cents per pound for it. He is a merchant, and has learned something about dealing in honey. Can that honey be used as feed for bees? If so, how is the best way to prepare it? Can it be diluted like extracted honey?

I have a good chance to buy 40 or 50 colonies, this spring, that are heavy, and, I expect, in good condition; most of them have been wintered out of doors, by being packed well with hay. What can I afford to give per colony, for all that are all right? And how much per colony for all that are dead and have left plenty of comb and honey? I think we have one of the best localities for bees in Iowa. I think there are, at least, 1,000 acres of white clover in pastures within two miles of our place, besides the roadsides and waste places. Then it is only about two miles to the Iowa river, where there is plenty of linden. Our vicinity is well filled up with apple and other fruit trees, besides acres of small fruits of all kinds grown for shipping.

I have been living here now 15 years, and have never known the red or white clover injured but once, by the winter. Our white clover, generally, remains in bloom several weeks, and as we have a spongy sub-soil, it stands a great deal of dry weather without injury. We also have a good supply of hearts-ease, and other good fall plants, for honey. I think I have a splendid place for making a first-class apiary. My bee yard is well protected with evergreens on the north and west, and, on my own grounds. I have about 600 fruit trees, besides small fruits in abundance. Now, as I have been making bee-culture a study for several years, both by reading and handling, I am determined on having a first-class apiary. The bees I speak of, belong to a man who desires to get rid of them. They are all in Langstroth hives, and most all of the standard size, the same as I now have. They were about all well filled with honey last fall, though several will require over-hauling to get them in good condition for handling. I will have to move them four miles. Please tell me if I can buy these bees so as to make them pay for themselves, and pay for handling, this season, with a usual honey yield, which is generally

good here. I think they can be obtained at a low price.

We have a good home market for honey, and our county is not overstocked with bees.

Le Grand, Iowa, March 16, 1883.

[We should have published this article some weeks ago, but in the rush of correspondence it became lost in the pile, and was forgotten.

Bees should not be taken out of the winter depository too early; there is danger of "spring dwindling" if removed from the cellar before the weather is settled. Nearly all of the questions propounded above have been answered during the past few weeks, by our correspondents, and these, we trust, have been noticed by Mr. Sanders.

Yes; the candied honey can be used for feeding bees.

If the colonies mentioned can be purchased at a moderate price, it will pay; especially as Mr. Sanders has such a good location; his home market being a good one for honey, and not overstocked with bees, an enlarged apiary will, no doubt, pay him.—ED.]

For the American Bee Journal.

Southern Queens—Raspberry Honey.

C. E. MEAD.

I have three queens that came from Georgia, last year. They all are in good condition and laying finely. They were in medium sized colonies; wintered on the summer stands, in two-story Simplicity hives. One from Massachusetts died in the fall, though her bees survived. There has been no spring dwindling, so far. Honey from the wild red raspberry is as clear as water, and as fine flavored as basswood or white clover. Do not young bees build comb before they are 37 days old? There is no danger of the queen being crowded out if a young laying queen is introduced immediately after the first swarm has issued. The best results I ever had were by cutting out all queen-cells, and introducing a young laying queen, immediately after the first and only swarm for that season. They hardly stopped work in the sections. The queen put an egg in every empty cell in the brood-chamber, and they had to go in the sections. Bees build only worker comb at this season of the year, until near swarming time. If they have a good queen, you can get nice worker combs by placing an empty frame between two straight combs in the centre of the cluster of bees. Save the combs that you take out, if they are mostly worker comb. Do not let the moth worms spoil them. Do not put in any frames till there are plenty of bees and some honey coming. I do not know that they use the cappings of the sealed

honey in making their combs, but an empty frame, placed in the centre of a cluster of bees, in the fall, is filled with worker comb by spring. Fall honey, well ripened, is not as strong as when first gathered, but has enough of the flavor left to indicate its source.

Chicago, Ill., April 23, 1883.

[Young bees have been noticed at work, gathering honey, when 9 or 10 days old; at 21 to 23 days old, they have been seen carrying pollen on their legs; but at 10 days old they have been noticed eagerly at work in comb-building.—ED.]

For the American Bee Journal.

Bee-Keeping in Maine.

E. P. CHURCHILL.

Last season was the poorest known for years; so cold and backward in spring that many colonies had to be fed to keep them alive. When white clover came it contained but little honey. The time passed on until goldenrod came, and if we were not blessed with a plenty of this, we should not have had half enough to winter on. Bees worked briskly on it for only a short time, when the frost cut it all off; after which we had about six weeks of fine weather; that the bees improved in trying to rob and make up the loss. They generally had a good store of honey; as was supposed, enough to last through the winter. But we have had one of the coldest and longest winters for many years.

A few days ago I listened to my hives on the summer stands (did not strike them to get a sound as some do), and I found two colonies dead. They were all out of stores, but strong in bees, and the cushions were all dry with but little frost in the hives. They were on five frames, with division-boards at the sides, woolen cloths on the frames, and 4 inches of chaff on the cloth. I could have saved them a week before, if I had then looked them over; but I do not approve of touching them, when I can help it, in winter. This prompted me to see to them at once. I took some of the hives into my shop and warmed them up, to summer heat. I darkened all the windows but on one side; setting the hive 18 inches from the window, and changed the frames and bees into new hives. I found that they had not feed enough to last a week, at most. As they had not had a flight for the winter, they had a good one then, perfumed the shop besides, and returned all right, and when quieted down, after having been given a good feed of sugar candy over the cluster, I set them carefully on their stands. The next day was mild enough to look the others over, on the stands. I found the remainder of the 12 almost out of stores, but one, in a chaff packed hive, had a good amount. Three cheers for chaff hives! I found capped brood in some of the hives. Now, unless bees are looked after

at once, there will be a great loss. I gave notice, in two weekly papers, of the condition, for we had better trouble the bees now than have them starve.

During the time they were idle in the fall, they were eating up what they are short of now. We, here, are very much interested in bee-keeping, and we are now trying to adopt a standard frame (the Langstroth). I have that and a deeper one; I lost a swarm in each. I think I can winter in Langstroth hives better than taller ones; they are so nice to handle, and there are so many other good features about them, that they must take the front rank.

I use spring steel wire for braces in the frames, and think it much better than tin. It is galvanized, and is cheaper than tin. I use a block to hold the frame square, while I put in the braces in the corners; the frames are all square, and the foundation will fit all alike. The centre brace is about $\frac{1}{8}$ of an inch. After the foundation is pressed on to the wires, I cut it in two, right over the centre brace, and press one edge by the brace. In this way it will suit the bees better, and be worked around much quicker. I use moss for watering bees, in shipping, and like it far better than anything else. A tin or wooden sheet, long enough to extend across the hive, 4 inches wide by $1\frac{1}{2}$ deep, I think about right; if tin is used, a strip of strong cloth or something of the sort is needed to tack over it, the whole length, unless we had a lip on each end. One made of wood and waxed inside, would be just as good. After the moss is packed in the tray, draw a few fine wires across it, and tack it, then, when wet properly, lay on the wire cloth across the frames, and you have a foundation that will not dry easily.

North Auburn, Maine, Mar. 6, 1883.

For the American Bee Journal.

Three Impossibilities.

S. MC LEES.

I have been reading, but kept silent while many have had their say, hoping they would soon close the scene on "that coming bee;" "the half-pound section craze," and "the standard frame," as some term it. They appear to be no nearer an agreement, than when it commenced. To get all to agree to all or either of the above, would be as impossible as to dip the ocean dry with a clam shell.

As for that coming bee, I do not care if she is the color of our flag, red, white and blue, if she is hardy, prolific and industrious. I care not for docility, I can teach them that; and as for beauty, I admit, for the sake of viewing her ladyship, it is quite convenient. The bee-keeper that cannot tell if she fills the bill or not without viewing her, wants more experience; as, surely, simply by viewing her, will not strengthen the colony or change her progeny.

As for the half-pound sections, I see no use for them, as they would be

only a nibble, and when I go fishing (and I find many of the same opinion), I detest a nibble, but enjoy a solid bite. If we have our honey stored in sections so small, will not the consumers cry: "only a nibble?" Have it understood that they want honey, and not wood, for their money.

As for a standard frame, another impossibility, it requires a deeper frame for a cold climate than for a warm one. Some may ask why it appears that instinct has taught them to cluster in as near a ball as possible, also to place their stores above them? As their stores become exhausted, and the heat arises, they only need to move upwards, on the combs, where it is of the same temperature; but if they were on shallow frames, and were compelled to move sidewise to reach their stores, after a term of severe weather, death would be almost certain; although the frames may contain an abundance of stores, they would starve, having become coated with ice by not being in a position to receive the heat of the colony, which would make but a slight difference, if the frames were shallow, in a climate where the mercury seldom goes below zero.

Old fogies, who will use no frames at all, when in conversation with them, remind me of the story of the boy about to go to mill on horse back. Upon filling the sack preparatory to going to mill, it was customary to put a bushel of corn in one end of the sack and a stone in the other, in order to have it balance across the back of the horse. The old gentleman, being absent for a moment, when the sack was to be filled and loaded, the boy divided the corn, placing part in each end of the sack, and threw it on, and it remained there. He was highly pleased with the new discovery he had made. Just at that moment the old man put in his appearance, and seeing the sack on the horse, and the stone lying on the ground, was about to inquire where he had got another stone, when he was discovered by the boy, who cried out, "See here, father, I have found out a better way; I have the corn on old Charlie's back, and it stays, and I hain't got no stone in, either." The old man replied, "Now, see here, boy, I want you to get that sack down, off thar, quicken scat, and put in that stun; it was the way my grand-father dun, and your grandfather and father, and you don't want no better way." Down the sack had to come, and in went the old stone!

I noticed an inquiry from W. C. Jennison, page 120, clipped from the *American Cultivator*, saying that honey gathered from the flowers of raspberries was of a dirty yellowish color, with a disagreeable flavor. Our burnt woods and waste places are covered with raspberry brush, and it appears to be a good honey plant.

I have 30 colonies and myriads of bees work on the flowers, and the honey gathered at that time has a slightly yellowish tinge, but is preferable to honey gathered from basswood; not having that aromatic flavor.

May, Mich., March 8, 1883.

What and How.

ANSWERS BY

James Heddon, Dowagiac, Mich.

What Ailed the Bees?

I have a friend, that, last fall, had 27 strong colonies of bees; he built a long, narrow house, sided up all around tight with shingle roof, with two floors, the first 8 or 10 inches above the ground, the second 6 inches above the first, filled in with sawdust. In this he put his bees, side by side, with a foot of chaff behind them, and 6 inches of chaff between and in front of them, facing south-east, the entrances to be open or closed at pleasure. A majority of the upper stories were full of honey, while others had none, the lids of all were loose, i.e. not glued down, but fitted tightly. In February I saw the bees; they were all strong, and apparently doing well. Four weeks ago I was at his house, and he told me that nearly all of his bees were dead. I helped him take them out; there were 5 colonies alive out of 27. I was there again last week, and the 5 were dead. The combs were all nice and bright and honey good. What ailed the bees?

A. J. DUNCAN.

Hartford, Iowa, April 14, 1883.

ANSWER.—All that our wisest doctors can do, is to diagnose the diseases of our colonies, when they can be right on the ground, and personally examine the condition of things. There are some laws governing the success of wintering, that just such a house is not specially adapted to; then, whether that house be better or worse, depends upon many conditions in its arrangement, that Mr. Duncan has not told us about. He says the combs were all nice and bright, but he does not say positively that there was no dysentery among the bees. If there was no signs of that disease, I must say, that as far as I can judge from what I glean regarding the case, "I give it up."

SELECTIONS FROM OUR LETTER BOX

Southern Queens.

I have just moved to this place and joined my brother in the bee business. We now have 445 colonies. On page 206, F. A. Snell says that his bees "were confined in the cellar 136 days and had no flight for 145 days; who can beat it?" My 85 colonies were put in the cellar Nov. 10 and taken out April 9, being in the cellar 150 days; they had no flight after Nov. 1, making 160 days' confinement, yet every colony

came out healthy and strong. I have noticed that it is cold which causes dysentery, not pollen. Martin Emigh answers T. S. Johnson, page 206, that his Southern queens did as well as Northern ones. My experience differs from him. On June 1, 1881, I bought 5 queens; they came from Louisiana; all were successfully introduced, but not one lived longer than September of that year, while queens from an Illinois breeder lived 3 and 4 years, and I now have daughters of the latter stock 4 years old. E. A. MORGAN. Columbus, Wis., April 23, 1883.

An Early Swarm.

On Nov. 10 and 11, 1882, I placed 20 colonies in winter quarters, in good condition. They were Italians, blacks and hybrids (I prefer the latter for business). April 13 and 14, 1883, I put them on their summer stands, one was dead and one weak. Without examining them I left for my place of business; on returning at noon I discovered a small swarm (3 quarts) of black bees clustered on a mason's "horse" about 800 yards from my apiary. With the assistance of a boy, I carried the horse and bees home and hived them on six frames of comb, containing sufficient capped honey. I examined them carefully, but could not find a queen, and I united them with my weak colony. Where did they come from? Bees usually swarm here in June.

G. N. ASSELSTINE.

Gananoque, Ont., April 16, 1883.

[It was, no doubt, a stray swarm which had left some disagreeable quarters.—ED.]

Bees Healthy.

I will just say that peach and cherry blooms are just opening here, and bees are generally healthy.

J. E. PITMAN.

Marlboro, Va., April 21, 1883.

Good Results of Cellar Wintering.

I have taken my bees out of the cellar, where I put 67 colonies last fall, and took out 65, but 3 are queenless, and one was robbed, leaving 61 in good condition. I winter them in a well-ventilated cellar, with plenty of young bees, and about 30 pounds of honey for each colony. J. W. POWELL.

Marshall, Minn., April 24, 1883.

A Pleasant Visit to Dr. N. P. Allen.

I lately made a visit to the ex-President of the National Society, Dr. N. P. Allen, who is very pleasantly located one mile from Smith's Grove, Ky., and his apiary is in one of the best locations I ever saw for the production of white clover honey. His apiary contains about 60 colonies, and is in fair condition. The doctor is making arrangements to exhibit fine bees and queens, as well as comb and extracted honey at Louisville, Ky., Exposition next September. This Exposition will be a grand opportunity for progressive apiarists, etc., to exhibit bees and supplies. The weather being so cold I could not see much of

his bees, but the two days I spent with the Doctor will be long remembered as time well spent. Our conversation was upon the many themes and theories of bee-keeping, and I was greatly pleased and benefited by his many suggestions.

JOHN CRAYCRAFT.
Salem, Ind., March 30, 1883.

Ventilation of Bees.

It is a well-known fact that bees are often idle for want of proper ventilation. I have studied the subject, and contrived one that suits all cases. Mr. Mason will use 4 on each double story hive; they are handsome on the hive, and can be put just where we want more or less ventilation, and shut off or not, the alighting-board entrance, and shut off all but one. I send you a sample of it. To fit them to the hive, draw a line across the centre of the hive, and set a screw on the line, so that the beveled edge runs along under the edge of the entrance hole bored through the hive. There is no patent on it. I take the utmost pleasure in the care of bees, and fixing for them. I make my hives all double story, so as to change one into two, in a moment. I set end wires for foundation $\frac{1}{8}$ inch from the end bars; then it is sure to be straighter. I use 3 wires on each side of the centre brace. I believe the time is near when double hives will be much used. I have made two that suit me in appearance, this winter.

E. P. CHURCHILL.

North Auburn, Maine.

[It is a semi-circle, with a hole covered with perforated tin, which can be turned over a corresponding hole in the hive, at pleasure.—ED.]

Bees in Nebraska.

My bees are doing finely; carrying in pollen very fast. I hope for a good honey season this year.

JAMES JARDINE.
Ashland, Neb., April 24, 1883.

How I Winter My Bees.

I had the most singular experience last season that I ever had with bees. Heretofore they have commenced swarming early in June and quit about July 4, but last season they commenced early in May, and continued on till the last of August, 4 months, and they have all wintered over and are in good condition. It is now wet and cold, but if it turns warm soon and is favorable weather, I hope to have a good crop of honey this season. Last spring I had 20 colonies; I now have 30; I sold 3 colonies last season. About half of my swarms left without saying "with your leave, sir." I winter on the summer stands, under sheds, boarded up on north and west sides. I laid 2 sticks on the top of the brood frames, a cloth spread over and a wheat chaff cushion packed in on top; which is all the protection I gave them. I think this is the proper way to winter bees; at least it suits me.

JOEL BREWER.
Lincolnville, Ind., April 23, 1883.

How Shall we Report?

That "candid request" caused the bees to flutter a little, and exclaim: "How shall we report?" "Large yields of honey in Texas," "Large yields—a review." Mr. Editor, you were perfectly right when you said "the colonies were doubled up to the capacity of 4 or 5 hives or more, so as to make, not an ordinary colony, but an extraordinary one." I think the fairest way to report is from 1 colony, without the increase, or piling them up 3 or 4, or more. They admit that they do this, and call it a colony. Mr. Doolittle states, all these conflicting stories can be harmonized; we know how the thing is done—the colony and its increase. But, as Mr. Heddon says, on page 126, "for Smith to put his yield from one colony and its increase, against Brown's report of surplus taken from one that did not give any increase, is not fair."

S. J. MCKINNIE.

Burlington, Iowa.

Bees in California.

We have splendid bee weather here, and our bees are doing well. We expect to have a good season this year. The bees in the neighborhood have foul brood and we fear that in a year or two the whole country will be full of it. Foul brood is not easily cured. It takes a good deal of work and trouble and I would advise bee-keepers to burn up everything affected by it. I have cured foul brood. I took out the combs, burned them up, and transferred the bees into a new box and moved them out of the bee yard; that was in 1881; I have not seen any affected by foul brood since I have got 75 colonies of bees and they are gathering honey from sage and other flowers. The hive we use here is 12x18, and the frames are 9x4. I put in a hive 12 frames, 8 of them with some brood, and my bees are in good condition. The swarming season has commenced here, and bee-keepers are very busy preparing for the season's work. The weather has been very unfavorable for bees to gather honey. The sage is just beginning to bloom. They are gathering honey from oak; we have a good deal of "honey dew" here. The honey from the oak is not of very good quality; quite a number of my bees gathered quantities of honey in the brood chamber during April.

A. C. CASSON.

Cucamonga, Cal., April 11, 1883.

Red Raspberry Honey.

As I have noticed several inquiries in regard to the value of the raspberry, as a honey producing plant, and also as to the quality of the honey obtained from the same, in reply I will say that I have kept bees for five years past, and, in my opinion, the red raspberry is the very best source from which honey is gathered in this vicinity, producing honey of a very superior quality, and a good lot of it. It is very plenty here, growing in abundance by the roadside, by the sides of fences and in pastures. It secretes honey at all hours of the day and bees may be seen at work on it any time

when the weather is such that they can leave their hive; the bees always prefer it to white clover, when both are in bloom. We have but one kind of raspberry here, and that is the common wild red raspberry. The past has been a very hard winter on bees in this part of the State. Last season was the poorest that I ever knew here, and those that neglected to feed and protect their bees have been heavy losers; those that were fed and put in the cellar have come out very well, as far as I know.

GILBERT W. DUNBAR.
North Anson, Maine.**Another Lady's Apiary.**

I have sixty-five colonies of bees to commence the spring work with; all are in good condition.

MRS. C. M. KINGSLEY.
Elvaston, Ill., April 23, 1883.**Honey and Beeswax Market.**OFFICE OF AMERICAN BEE JOURNAL,
Monday, 10 a.m., April 30, 1882.

The following are the latest quotations for honey and beeswax received up to this hour:

Quotations of Cash Buyers.

CHICAGO.

HONEY—The nominal price of extracted is 7c. for dark and 9c. for light—here. The supply is abundant and sales are slow.

BEESWAX—None in the market.
AL. H. NEWMAN, 923 W. Madison St.

CINCINNATI.

HONEY—There is no excitement in the honey market, but sales are fair to our regular trade. Offerings are plentiful of extracted and comb honey. Extracted brings 7@9c. on arrival. The sales of comb honey are very slow, although there is a large supply of first-class quality on the market. It brings 12@18c. on arrival.

BEESWAX—Comes in slowly and brings 20@30c. per lb., according to quality. CHAS. F. MUTH.

Quotations of Commission Merchants.

CHICAGO.

HONEY—The demand is light and it is not now probable that all of the comb honey can be sold before a new crop comes. Prices are very irregular and generally lower, 15@16c. for white, and dark unsalable. Extracted, very little trade is being done in it. 7@9c. is about the market.

BEESWAX—35@36c.
R. A. BURNETT, 161 South Water St.

SAN FRANCISCO.

HONEY—Buyers are readily obtained for choice comb or extracted at full figures, but off qualities meet with slow sale.

White comb, 14@17c.; dark to good, 11@13c.; extracted, choice to extra white, 8@9c.; dark and candied, 5@7c.

BEESWAX—We quote 30@33c.
STEARNS & SMITH, 423 Front Street.

ST. LOUIS.

HONEY—Dull; light jobbing sales only. Comb at 10@14c.—Strained and extracted at 7@7c. Couple lots of poor comb sold at 10c.

BEESWAX—Scarce and wanted at 35c.
W. T. ANDERSON & Co., 117 N. Main Street.

CLEVELAND.

HONEY—Is a little lower, and at the lower price it has moved off a little better of late. 1-lb. sections of best white sold at 18@19c.; second grades, 1-lb. 17c.; 2-lb. sections a little slow at 17@18c. Extracted very dull at 9@11c.

BEESWAX—None in market.
A. C. KENDAL, 115 Ontario Street.

BOSTON.

HONEY—Our market is fairly active. We quote: 1/2 lb. sections at 30c.; 1 lb. sections, 22@25c.; 2 lb. sections, 26@28c. Extracted, 10c. per lb. Good lots of extracted are wanted in kegs or barrels.

BEESWAX—Our supply is gone; we have none to quote.

CROCKER & BLAKE, 57 Chatham Street.

Special Notices.

Examine the Date following your name on the wrapper label of this paper; it indicates the end of the month to which you have paid your subscription on the BEE JOURNAL.

For safety, when sending money to this office get either a post office or express money order, a bank draft on New York or Chicago, or register the letter. Postage stamps of any kind may be sent for amounts less than one dollar. Local checks are subject to a discount of 25 cents at Chicago banks. American Express money orders for \$5, or less, can be obtained for 5 cents.

We wish to impress upon every one the necessity of being very specific, and carefully to state what they desire for the money sent. Also, if they live near one post office, and get their mail at another, be sure to give us the address we already have on our books.

Our Premiums for Clubs.

Any one sending us a club of two subscribers for 1 year, for the Weekly, with \$4, will be entitled to a copy of Bees and Honey, in cloth, postpaid.

For three subscribers, with \$6, we will send Cook's Manual, in paper, Emerson's Binder for the Weekly, or Apiary Register for 50 colonies.

For four subscribers, with \$8, we will send Cook's Manual in cloth, or Apiary Register for 100 colonies.

For five subscribers, with \$10, we will send the Apiary Register for 200 colonies, Quinby's New Bee-Keeping, Root's A B C of Bee Culture, or an extra copy of the Weekly BEE JOURNAL for one year.

To get any of the above premiums for the Monthly BEE JOURNAL send double the number of subscribers, and the same amount of money.

Mr. James Heddon announces on another page that he cannot supply any more Hives, etc., in the flat. All interested should notice the advertisement.—Adv.

Ribbon Badges, for bee-keepers, on which are printed a large bee in gold, we send for 10 cts each, or \$8 per 100.

Do not let your numbers of the BEE JOURNAL for 1882 be lost. The best way to preserve them is to procure a binder and put them in. They are very valuable for reference.

Constitutions and By-Laws for local Associations \$2.00 per 100. The name of the Association printed in the blanks for 50 cents extra.

Honey as Food and Medicine.

A new edition, revised and enlarged, the new pages being devoted to new Recipes for Honey Medicines, all kinds of cooking in which honey is used, and healthful and pleasant beverages.

We have put the price of them low to encourage bee-keepers to scatter them far and wide. Single copy 6 cents, postpaid; per dozen, 50 cents; per hundred, \$4.00. On orders of 100 or more, we print, if desired, on the cover-page, "Presented by," etc., (giving the name and address of the bee-keeper who scatters them). This alone will pay him for all his trouble and expense—enabling him to dispose of his honey at home, at a good profit.

The Apiary Register.

All who intend to be systematic in their work in the apiary, should get a copy and commence to use it.

For 50 colonies (120 pages)..... \$1.00
" 100 colonies (220 pages)..... 1.50
" 200 colonies (420 pages)..... 2.00

The larger ones can be used for a few colonies, give room for an increase of numbers, and still keep the record all together in one book, and are therefore the most desirable ones.

Cyprians Conquered.

All summer long it has been "which and tother" with me and the Cyprian colony of bees I have—but at last I am "boss." Bingham's "Conqueror Smoker" did it. If you want lots of smoke just at the right time, get a Conqueror Smoker of Bingham.

G. M. DOOLITTLE.
Borodino, N. Y., Aug. 15, 1883.
18A4t 5B1t

Foul Brood Pamphlet.—Wishing to be relieved of sending out my pamphlet on Foul Brood, I have made arrangements with Mr. T. G. Newman to supply them to the bee-keeping fraternity desiring them.

A. R. KOHNKE.
Youngstown, O., April 25, 1883.

Postage stamps, of one, two or three cent denomination, accepted for fractional parts of a dollar; but money is preferred.

Quite a number of the new subscribers, who have begun to take the JOURNAL this month, ask if we can supply the numbers from Jan. 1, 1883. We would say that we can supply a few more sets, and if any want them they must be sent for soon, or they cannot be obtained. We can supply no more numbers of 1882. They are all gone.

Special Notice.—We will, hereafter, supply the Weekly BEE JOURNAL for 1883 and Cook's Manual in cloth for \$2.75, or the Monthly and Manual in cloth for \$1.75. As this offer will soon be withdrawn, those who desire it should send for the book at once.

May we ask you, dear reader, to speak a good word for the BEE JOURNAL to neighbors who keep bees, and send on *at least one new* subscription with your own? Our premium, "Bees and Honey," in cloth, for one *new* subscriber to the Weekly, or two for the Monthly, besides your own subscription to either edition, will pay you for your trouble, besides having the satisfaction of knowing that you have aided the BEE JOURNAL to a new subscriber, and progressive apiculture to another devotee.

On the next page may be found the advertisement for a "comb foundation fastener," by D. C. Talbot, of Elroy, Wis., to which attention is invited.—adv.

Our stock of back numbers of this volume are now getting very low. Please look over your numbers, and if any are lacking, send us a postal card, giving the date of those you want, and we will send them, if not all gone. We give this notice, because, last year, several left it until the end of the year, and then requested us to send the missing numbers. Then it was too late, the numbers being all gone. Look them over now, and you may get them completed.

We have a few copies of our pamphlet entitled "Bee Culture" left, and have reduced the price from 40 to 25 cents each, or \$2 per dozen.

Emerson Binders—made especially for the BEE JOURNAL, are lettered in gold on the back, and make a very convenient way of preserving the BEE JOURNAL as fast as received. They will be sent, post-paid, for 75 cents, for the Weekly; or for the Monthly, 50 cents. They cannot be sent by mail to Canada.

Preparation of Honey for the Market, including the production and care of both comb and extracted honey, instructions on the exhibition of bees and honey at Fairs, etc. This is a new 10 cent pamphlet, of 32 pages.

When writing to this office on business, our correspondents should not write anything for publication on the same sheet of paper, unless it can be torn apart without interfering with either portion of the letter. The editorial and business departments are separate and distinct, and when the business is mixed up with items for publication it often causes confusion. They may both be sent in one envelope but on separate pieces of paper.

Renewals may be made at any time; but all papers are stopped at the expiration of the time paid for, unless requested to be continued.

Reduction in Price of Foundation.

Until further notice we will sell our Vandervort FOUNDATION at FORMER PRICE, 50 cents per pound for HEAVY, and 60 cents per pound for THIN for Sections. If ordered in 25-pound boxes, 49c. and 59c.; and if ordered in 100-pound lots, 48c. and 58c. per pound. Orders filled at once.

G. W. STANLEY & BRO.
WYOMING, N. Y.

FARM, HERD and HOME.**A First-Class Monthly**

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PATENT FOUNDATION MILLS 6—inch, \$10.00.
10—inch, \$15.00.
W. C. PELHAM, Maysville, Ky.

ELECTROTYPE

Of Engravings used in the Bee Journal for sale at 25 cents per square inch—no single cut sold for less than 50c. **THOMAS G. NEWMAN,**
925 West Madison Street Chicago, Ill.

THIS PAPER may be found on file at Geo. P. Rowell & Co.'s Newspaper Advertising Bureau (10 Spruce St.), where advertising contracts may be made for it in NEW YORK.

EXCELSIOR HONEY EXTRACTORS.

In answer to frequent inquiries for Extractors carrying 3 and 4 Langstroth frames, I have concluded to adopt these two new sizes. The 3 frame basket is in a can of the same size and style as the 2 frame. The 4 frame basket is in the larger can, with the cone or metal standard for the basket to revolve upon, leaving room underneath the basket for 75 or 80 lbs. of honey. It will be complete, with covers, and in every way identical, except in size, with the \$16.00 Extractor, 13x20, which is intended for any size of frame.

Excepting with the \$8.00 Extractors, all the different styles have strainers over the can leading to the honey gate, and movable sides in the Comb Baskets. The \$8.00 and \$10.00 Extractors have no covers.

For 2 American frames, 13x13 inches.....	\$8.00
For 2 Langstroth " 10x18 " "	8.00
For 3 " " 10x18 " "	10.00
For 4 " " 10x18 " "	14.00
For 2 frames of any size, 13x20 "	12.00
For 3 " " 12x20 " "	12.00
For 4 " " 13x20 " "	16.00

ALFRED H. NEWMAN,
925 West Madison Street, Chicago, Ill.